Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	CC Docket No. 94-1
Price Cap Performance Review	)	
for Local Exchange Carriers	)	

NYNEX COMMENTS

The NYNEX Telephone Companies

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SUMMARY

In its X-Factor NPRM, the Commission seeks comment on various long term price cap plan issues concerning determination of the X-Factor or productivity offset, the number of X-Factors and the criteria associated with their application, sharing requirements, the common line formula and exogenous cost rules. As discussed herein, NYNEX offers proposals on these issues that will advance pro-competitive goals, improve efficiency incentives and ease regulatory burdens.

In Section II below, NYNEX presents a proposal for three productivity offset options, all with sharing eliminated. This multiple option proposal is consistent with LEC heterogeneity, advances pro-competitive public policies, and fosters greater efficiency incentives. The first level of productivity offset (Baseline X) is based on a LEC historical moving average Total Factor Productivity ("TFP") plus a fixed factor. The second level offset (X-A) is available when barriers to competition have been removed in areas or jurisdictions representing 75% of a LEC's access lines, as shown by compliance with an objective checklist; and a competitor is operational in the region. The third level offset (X-B) is available when, in addition to barriers to competition having been removed in all service areas, there is a measurable competitive presence; i.e., competitors are present in areas representing, e.g., 40%-50% of the LEC's business access lines (or 40% to 50% of revenue for special access).

In Section III we show that the moving average TFP methodology as revised and simplified by Christensen and Associates should be the starting point used to determine the Baseline X-Factor. NYNEX believes that a long term Input Price Differential ("IPD") is zero

and that there are great difficulties in computing a reasonable short term IPD. However, NYNEX thinks that some factor to account for higher interstate output growth may be required, and NYNEX looks forward to working with the Commission and other parties in this proceeding to develop such an economically based additive.

In Section IV NYNEX demonstrates the shortcomings of alternative methods of calculating the X-Factor. Specifically, we address the Historical Revenue Method, Historical Price Method, Combined Revenue/Price Method, continuation of the interim plan, and econometrics. We also show that a Consumer Productivity Dividend ("CPD") that is not based on economic rationale is not appropriate.

In Section V we show that under the moving average TFP methodology, the separate common line formula in the price cap plan can and should be eliminated. However, if the Commission retains a separate common line formula, the per-line formula should not be adopted.

Finally, in Section VI we show that under the moving average TFP methodology, exogenous cost adjustments may be reduced to very limited items such as Separations-related changes. However, if the Commission calculates the X-Factor using any other approach, such as a fixed TFP methodology, then the Commission should at least retain the recognition of exogenous costs under the interim plan.

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NYNEX COMMENTS

The NYNEX Telephone Companies ("NYNEX")[1] file these Comments in response to the Commission's Fourth Further Notice of Proposed Rulemaking ("X-Factor NPRM") released September 27, 1995, in the above-captioned matter.

I. INTRODUCTION AND OVERVIEW

On April 7, 1995, the Commission released its Price Cap Review Order[2] which completed the first phase of the Commission's performance review of LEC price cap regulation.[3] In that Order the Commission adopted certain interim revisions to the LEC price cap plan pending adoption of long term revisions to the plan. The interim revisions included increasing the productivity offset (or X-Factor) in the price cap formula, modifying sharing and low-end adjustment requirements, and changes in exogenous cost rules.

The Price Cap Review Order also concluded that the long term LEC price cap plan should include a new method of calculating the X-Factor. In particular, the Commission

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1 The NYNEX Telephone Companies are New England Telephone and Telegraph Company and New York Telephone Company.

2 CC Docket No. 94-1, First Report and Order.

3 See X-Factor NPRM at ¶¶ 1-11.

concluded that the X-Factor should be based on an industry-wide measure of performance and should include changes in unit costs that have occurred since the adoption of the price cap plan. The Commission tentatively decided that the X-Factor should be based on a moving average rather than fixed for a number of years. The Commission also tentatively decided to base the X-Factor on a Total Factor Productivity ("TFP") method -- involving a ratio of an index of total outputs to an index of total inputs -- and to include two or more possible X-Factors in the long term plan. Furthermore, the Commission established a long term goal of eliminating sharing. In addition, the Commission decided that in any long term plan with multiple X-Factors, at least one of those X-Factors should have no associated sharing obligations.

In its X-Factor NPRM, the Commission seeks comment on various long term price cap plan issues concerning determination of the X-Factor, the number of X-Factors and the criteria associated with their application, sharing requirements, the common line formula and exogenous cost rules.

In Section II below, NYNEX presents a proposal for three productivity offset options, all with sharing eliminated. This multiple option proposal is consistent with LEC heterogeneity, advances pro-competitive public policies, and fosters greater efficiency incentives. The first level of productivity offset (Baseline X) is based on a LEC historical moving average TFP plus a fixed factor. The second level offset (X-A) is available when barriers to competition have been removed in areas or jurisdictions representing 75% of a LEC's access lines, as shown by compliance with an objective checklist; and a competitor is operational in the region. The third level offset (X-B) is available when, in addition to barriers to competition having been removed in all service areas, there is a measurable competitive presence; i.e., competitors are present in

areas representing, e.g., 40%-50% of the LEC's business access lines (or 40% to 50% of revenue for special access).

In Section III we show that the moving average TFP methodology as revised and simplified by Christensen and Associates should be the starting point used to determine the Baseline X-Factor. NYNEX believes that a long term Input Pricing Differential ("IPD") is zero and that there are great difficulties in computing a reasonable short term IPD. However, NYNEX thinks that some factor to account for higher interstate output growth may be required, and NYNEX looks forward to working with the Commission and other parties in this proceeding to develop such an economically based additive.

In Section IV NYNEX demonstrates the shortcomings of alternative methods of calculating the X-Factor. Specifically, we address the Historical Revenue Method, Historical Price Method, Combined Revenue/Price Method, continuation of interim plan, and econometrics. We also show that a Consumer Productivity Dividend ("CPD") that is not based on economic rationale is not appropriate.

In Section V we show that under the moving average TFP methodology, the separate common line formula in the price cap plan can and should be eliminated. However, if the Commission retains a separate common line formula, the per-line formula should not be adopted.

Finally, in Section VI we show that under the moving average TFP methodology, exogenous cost adjustments may be reduced to very limited items such as Separations-related changes. However, if the Commission calculates the X-Factor using any other approach, such as a fixed TFP methodology, then the Commission should at least retain the recognition of exogenous costs under the interim plan.

II. NYNEX RECOMMENDS THREE X-FACTOR OPTIONS REFLECTING LEVELS OF COMPETITION AND NO SHARING

In the LEC Pricing Flexibility NPRM,[4] the Commission seeks comment on using the level of competition faced by a LEC as a basis for assigning an X-Factor, and using the level of competition to determine a LEC's sharing obligation.[5] In particular, the Commission requests comment on a NYNEX proposal to reduce or eliminate sharing for LECs that have implemented measures to promote local exchange competition.[6] Pursuant to the Orders released November 13 and November 21, 1995 by the Chief, FCC Common Carrier Bureau,[7] NYNEX is including its comments on these issues in the present filing responsive to the X-Factor NPRM. Our comments on these issues also relate to Issues 4 and 5 in the X-Factor NPRM on the number of X-Factors, and sharing requirements and alternatives.[8] In this regard, NYNEX recommends that the Commission follow an integrated, holistic approach to resolving interrelated issues in its pending proceedings on the X-Factor and pricing flexibility, and in the expected proceeding on access rate structure. The regulatory rules in these areas should be similarly adapted to marketplace changes and tied to the development of competition.

For the reasons set forth herein, NYNEX believes that the Commission should eliminate sharing for all price cap LECs.[9] This would break the remaining links between pricing and rate of return costing, and it would provide the maximum incentives for LECs to become more efficient.

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4 CC Docket No. 94-1, Second Further Notice Of Proposed Rulemaking, released September 20, 1995. That Notice considers specific changes to interstate access price regulation to respond to changes in the market for those services.

5 See id. at ¶¶ 159-72.

6 See id. at ¶¶ 165-72.

7 CC Docket Nos. 94-1, 93-124, 93-197, Orders On Motions For Extension Of Time.

8 See X-Factor NPRM at ¶¶ 108-29.

9 If sharing is retained, then symmetry and fairness require that the low-end adjustment also be retained.

The Commission should use multiple X-Factor options as an incentive for LECs to encourage competition in access and local exchange markets. Both the Congress and the Commission have expressed the desire to have LECs open up their local exchange markets to competitors. The NYNEX approach espoused herein can be used to anticipate sound public policy and the intent of Congress by encouraging LECs to open up their markets as quickly as possible.

There is also an economic basis for varying the X-Factor based on the level of competition. The issue of competition and its impact on productivity growth has been discussed at various points throughout this proceeding. The original Christensen Study showed that firms like the price cap LECs, whose provision of services are characterized by economies of density, experience a reduction in productivity when impacted by competition.[10] In addition, a LEC facing increased competition will incur increased marketing costs at the same time that its revenues are declining. LECs in less competitive markets do not face these pressures, and they are better able to maintain the historic productivity levels that they experienced in a monopoly environment. The uneven effect of competition on individual price cap LECs will result in an even wider variance of actual productivity among the price cap LECs than exists today. The

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[10] The Christensen Study on TFP concluded that as competition increases, LECs are faced with the prospect that future output growth in these areas will be less than historical growth, leading to downward pressure on TFP growth:

> Since divestiture, the LECs have experienced more modest rates of output growth, and with increasing competition in their markets, they face the prospect of even slower output growth. Because the provision of LEC services is characterized by economies of density, these reductions in output growth will tend to reduce LEC TFP growth....
>
> Much of the increasing competition for LECs is focused in markets with high price-to-marginal-cost ratios. If competition effectively leads to lower LEC output growth in these high margin markets, LEC TFP growth will also be lower.
>
> NYNEX Comments filed May 9, 1994 in CC Docket No. 94-1, Attachment 1, pp. 13-14. Productivity of the Local Telephone Companies Subject to Price Cap Regulation.

LECs currently face differing levels of competition in access and local exchange markets. Those LECs facing greater competition experience lower productivity levels during the transition to a competitive marketplace, since in the short run competition reduces a LEC's outputs faster than inputs can be reduced.

In the long term, however, competition will likely have an upward impact on a company's productivity if the company is to survive, but it is important to note that streamlined regulation is appropriate in the fully competitive environment which prompts higher productivity. The time frame associated with this transition would be dependent on a number of variables which are unique to the market and company in question. Once a firm completes the transition successfully, its increasing internal productivity would no longer be an issue, as price cap regulation would no longer apply.

The changes in access rate structures that will be required in a competitive environment also create a need for reducing the X-Factor. The transition to a competitive environment will force a realignment of costs and prices in an economic manner that will shift more non-traffic sensitive (NTS) costs to elements like the EUCL. The resulting shift to per line recovery from per minute recovery will cause the measured TFP of LECs to decline, since line growth is much below the level of usage growth. The TFP methodology measures LEC TFP growth as output growth minus input growth. Output growth in these studies is measured as a revenue share weighted average of the growth rates in LEC services. Historically, network usage has been priced above, and network access has been priced below, its incremental cost. Competition, or the genuine threat of it, will force prices for LEC services into line with incremental costs. Therefore, as telecommunications markets become more competitive, usage (traffic sensitive)

rates fall relative to access (NTS) rates. As this happens, the revenue share attached to usage services falls and the revenue share attached to access services rises. The lower revenue share on usage and the higher revenue share on access results in a decline in measured LEC output and TFP growth. A Baseline X-Factor, based on industry average historical TFP growth, will not fully reflect this trend and should be adjusted to recognize this constraint on future individual LEC TFP growth possibilities. As LECs differ significantly with respect to their current competitive environment, and their pace in approaching fully competitive status, the X-Factor adjustment should be reflective of this heterogeneity.[11] The Commission should allow a LEC to elect a lower X-Factor as it removes barriers to entry and faces greater levels of competition, thus combining sound public policy with sound economic policy.

The rationale underlying the NYNEX proposal is based on the unquestioned benefits that accrue to the public and to participants in a competitive environment. The phased-in framework proposed in the NYNEX Comments in response to the LEC Pricing Flexibility NPRM and in recent ex partes, can lead to the creation of a fertile environment for local exchange competition in advance of any requirements to open up the local exchange market contained in telecommunications legislation. The criteria set forth by NYNEX, when met, will mean that local exchange competition is truly viable.

The Commission, through a long series of actions, has taken steps to remove restrictions to competition in interstate markets. The Commission has pursued this course because a

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[11] NYNEX believes that the proposal to allow a LEC increased pricing flexibility if it chooses a higher X-Factor would be counterproductive. See LEC Pricing Flexibility NPRM at ¶ 160. In general, LECs facing the least competition tend to exhibit the highest productivity and the highest earnings. Such carriers do not need additional pricing flexibility to respond to competition.

competitive market is recognized to be the best mechanism to control price and prompt companies to deploy modern infrastructure in a rapid manner. However, the interstate switched access market cannot be effectively competitive until the local exchange market becomes so, and the Commission's policies to promote access competition can be hindered if restrictions exist to prevent similar competition in intrastate markets.[12] For example, unless alternative providers exist for local exchange service, the majority of competition for interstate access constitutes competition for the facilities only, since switched traffic will still have to be routed through a LEC switch. Further, a competitive access provider ("CAP") that can use expanded interconnection arrangements only to provide interstate access, because the arrangement is not available in the intrastate jurisdiction, may determine that the geographic area is not an attractive one in which to offer competition to the incumbent LEC.

Both the Administration and Congress have expressed positions that support the development of competition in the local telecommunications markets. In a statement before the House Subcommittee on Telecommunications and Finance on May 26, 1994, FCC Chairman Hundt observed:

> ... the enormity of the tasks before the Commission is reflected in a number of areas where technology and investment have made change possible. In the common carrier area, for example, the Commission has sought to bring competition to all aspects of telephone service. Its proceedings to provide expanded interconnection access capability go beyond long distance and include local exchange competition. Ensuring the substantial benefits of greater consumer choice, faster deployment of technology, reduced rates, and

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[12] The International Communications Association ("ICA") pointed out a similar situation in its Reply Comments in this proceeding. ICA observed: "A significant barrier to competition is the current inability of entrants to offer, or users to buy, combined interstate access and local services due to state-level prohibitions." Reply Comments of the ICA filed June 29, 1994 in CC Docket No. 94-1, p. 7.

> increased efficiencies on the part of the local exchange carrier require considerable efforts of the agency.[13]

NYNEX shares the FCC Chairman's belief that competition provides the greatest incentives for increased efficiency, increased consumer benefits and prompt infrastructure deployment. The strongest argument for a pure form of price caps is based on the greater incentive for efficiency such a regulatory plan creates. Accordingly, combining aspects of the price cap plan with efforts to foster a competitive local exchange market can yield two-fold public benefits. It is appropriate, therefore, that the Commission explicitly link the two by taking steps in this docket to encourage LECs to open up their local exchange markets. To this end, and in keeping with the broad framework NYNEX has laid out in its recent ex partes, NYNEX herein suggests that the Commission provide a phased-in reduction in the total Baseline X-Factor as price cap LECs take steps to remove barriers to entry in the local exchange market, and as competitors actually begin to offer alternatives to LEC customers.

In the past, the Commission has linked the optional X-Factors to different levels of sharing: i.e., the higher the X-Factor, the less sharing. The Commission adopted multiple X-Factors to reflect different economic and market conditions among the regions. By allowing reduced sharing, or no sharing, for companies that selected the higher X-Factors, the Commission provided an incentive for a LEC to achieve higher productivity levels.[14]

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[13] Statement of Reed E. Hundt, Chairman, Federal Communications Commission, Before the Subcommittee on Telecommunications and Finance, Committee on Energy and Commerce, House of Representatives, Concerning The 1995 Authorization Act For The Federal Communications Commission (May 26, 1994), p. 4.

[14] See Price Cap Review Order at ¶ 215. It should also be noted that tying a higher X-Factor to the elimination of sharing may encourage LECs to resist competition, since a high productivity offset cannot be sustained as outputs are rapidly eroded by competitors during the transition to a competitive market.

The Commission should now go further and completely eliminate the sharing mechanism. As the Commission has found, sharing blunts the incentive for a LEC to become more efficient, because it must give back some of the efficiency gains through additional price reductions.[15]

More importantly for the Commission's efforts to promote competition, the sharing mechanism makes it much more difficult to allow increasing pricing flexibility, and removal of services from price caps, as competition increases. Experience has shown that competition does not occur uniformly across all services and all geographic areas. Especially in the early stages, competition tends to be concentrated in areas of high customer density and for services that have relatively high margins, such as business services in urban areas. Because costs are recorded on a study area basis, it is difficult to remove costs for competitive services from the price cap system as rates are removed from price caps. If the sharing obligation is determined based on total company earnings, the reduced revenues in competitive markets could reduce a company's sharing obligation, and it may even cause the LEC to apply for a low-end adjustment (if still applicable). By eliminating sharing, the Commission can adopt a price cap system that allows for the removal of services from price caps as the services become subject to effective competition, without adopting new cost allocation rules or complex measures to prevent competition from affecting rates for less competitive services.

For these reasons, the Commission should endeavor to adopt a "pure" price cap regime by eliminating sharing for all X-Factor options. At the same time, the Commission should adopt

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[15] See id. at ¶114. Sharing mechanisms also continue the administrative burdens associated with rate of return-type regulation.

X-Factors that reflect the impact of competition on the LECs and that provide an incentive for the LECs to promote competition. It is also important that the system be easy to administer, which would reduce the regulatory burden on the Commission and the industry and enhance the effectiveness of the incentive. NYNEX suggests that the Commission adopt the following proposal:

Level	Criterion	Productivity Offset
I (Baseline)	No Competitive Presence Or Market Entry	Baseline X: Moving Average TFP Plus Fixed Factor
II (Open Market Entry And Competitor Present)	Barriers To Competitive Entry Have Been Removed in, e.g., 75% Of The LEC's Service Area,[16] As Shown By Compliance With Checklist; Competitor Is Operational In Region	Level I X - (.25)(X)
III (Significant Competitive Presence)	Barriers to Competitive Entry Have Been Removed; Competitive Presence In Areas Representing, e.g., 40%-50% Of The LEC's Business Access Lines (Or 40%-50% Of Revenue For Special Access)	Level I X - (.40)(X)

The Baseline X-Factor would apply to LECs serving areas still having barriers to entry and where there is no competitive presence or market entry. LECs that have removed barriers to competition in areas or jurisdictions representing 75% of their access lines, and shown that a competitor is operational within their region, would receive a 25% reduction in the Baseline X-Factor. Such a reduction would provide sufficient incentives for a LEC to eliminate barriers to entry to competition. Once a LEC can show significant presence of competition -- i.e.,

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[16] This would specifically refer to 75% of switched access lines and 75% of special access revenue.

competitive presence in areas representing 40%-50% of the LEC's business access lines or in areas representing 40%-50% of revenue for special access -- and have removed barriers to entry in all jurisdictions, an additional 15% reduction in the Baseline X-Factor should be applied. This would ensure that the productivity offset in the price cap formula reflects the reduction in actual productivity which would occur as a LEC transitions to a competitive marketplace.

To make this system easy to administer, the Commission should apply the different productivity offsets based on the level of competition throughout a LEC's service area, by type of service -- Switched or Special. The measure of a LEC's efforts to open its markets to competition should be determined according to a clear and meaningful competitive checklist, such as the checklist in paragraph 108 of the LEC Pricing Flexibility NPRM.[17] Also, the measure of market addressability in Level III should be determined based on reports from the competitive local exchange providers.[18] The Commission should establish benchmarks in its rules so that all parties can make their business plans with some element of predictability about the regulatory environment.

III. THE CHRISTENSEN MOVING AVERAGE TOTAL FACTOR PRODUCTIVITY METHODOLOGY SHOULD BE ADOPTED TO DETERMINE THE LEC BASELINE PRODUCTIVITY OFFSET

As discussed below, NYNEX recommends that the moving average TFP methodology, as revised and simplified by Christensen, should be used in calculating the Baseline Productivity

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[17] The Commission should not adopt items "g" or "h" on the checklist, which concern intraLATA toll dialing parity and the deployment of collocated facilities in wire centers that correspond to a significant portion of the LEC's revenues. See NYNEX Comments in response to LEC Pricing Flexibility NPRM (December 11, 1995), pp. 21-22, notes 21 & 22. That measure of competition is more appropriate in the context of Level III, which concerns competitive presence.

[18] See NYNEX Comments in response to LEC Pricing Flexibility NPRM, supra, p. 30 n. 31 and CCB-IAD 95-110 Telecommunications Access Provider Survey, Public Notice released November 3, 1995.

Offset in the long term price cap plan. No IPD or CPD should be applied. The use of the moving average TFP method will ensure that ongoing gains by the LECs in reducing unit costs are passed through to customers in a timely manner.

The multiple options as proposed by NYNEX enable the Commission to strike a careful balance between LEC-specific X-Factors and broad industry averages. When conditions warrant an adjustment, LECs will be able to reflect the lower productivity associated with competitive inroads, while still "competing" against an industry average.

The Commission has tentatively concluded that a TFP approach should be used to compute the X-Factor in the future.[19] The Commission observed that, because TFP studies actually measure productivity growth rates, a TFP approach is ideally suited to determining the X-Factor. The Commission should reaffirm this conclusion based on the record developed in this proceeding. The TFP methodology represents the only economically sound means of estimating total company productivity. As noted above, it may be desirable to refine the TFP results to reflect the intuited greater degree of interstate productivity, and NYNEX looks forward to working with the Commission and other parties in this proceeding to develop appropriate, economically based refinements to the TFP results. At present, however, the Christensen approach is the best starting point in determining an appropriate Baseline productivity factor.

Christensen and Associates have updated and revised their study of TFP growth for the LEC industry.[20] These revisions respond to the concerns raised by the Commission and various

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[19] X-Factor NPRM at ¶ 25; Price Cap Review Order at ¶ 155.

[20] L. R. Christensen, P. E. Schoech, and M. E. Meitzen, "Total Factor Productivity Methods For Local Exchange Carrier Price Cap Plans," November 1995. This study, which is included in Appendix A, addresses The TFP Issues 1a - 1h raised in the X-Factor NPRM (¶¶ 22-53).

intervenors and simplify the TFP calculation to better suit an annual moving average. These revisions were made without sacrificing the quality of the study and without significantly affecting the TFP result. As noted by Christensen, the proposed simplifications do not deviate from best practices. Consistent with the Commission's objectives as stated in its X-Factor NPRM (at ¶ 16), the study is soundly based on economic theory, employs calculations that are reasonably simple, and uses public and verifiable data. The updated study is based on the same theory, and employs essentially the same computations, as the previous study (May 1994). Some proprietary data sources have been replaced, however, with publicly available data sources in order to make the study consistent with the Commission's objective to use accessible and verifiable data.

The study employs the well-known and accepted Divisia approach to measuring productivity growth.[21] In this approach, productivity growth is measured as a revenue share weighted average of the growth rates in outputs minus an expenditure share weighted average of the growth rates in inputs.

A. Output

Christensen examines seven categories of output in the study: local service, long distance, interstate end user, interstate switched access, interstate special access, intrastate access and miscellaneous services. To generate output indexes, booked revenues for the categories are deflated by price indexes reflecting the services in the categories. Booked revenues are obtained from the LEC Form M data submitted to the Commission. The Form Ms also contain data on the

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[21] For a survey of the Divisia and other approaches to the measurement of productivity, see W. E. Diewert, "Capital and the Theory of Productivity Measurement," American Economic Review Papers and Proceedings, May 1980.

gross revenue effect of price changes. The gross revenue effect information is used to construct price indexes for the local, long distance and intrastate access categories. An end user price index is generated by dividing end user common line revenue by the number of access lines. A price index for interstate switched access is calculated as carrier common line plus traffic sensitive revenue divided by an index of carrier common line and traffic sensitive minutes. These data are also contained in the Form Ms. The GDP-PI is used as the deflator for miscellaneous services. Category output indexes are generated by dividing category revenues by the category price indexes. An aggregate output index is calculated as a revenue share weighted average of the growth rates in the category output indexes.

B. Labor Input

Christensen uses the average number of employees during the year as the quantity of labor input. Total labor compensation is the sum of wages and salaries, benefits and payroll taxes. These data are contained in the Form Ms. The price of labor is an average price, and is calculated as labor compensation divided by employees.

C. Capital Input

Christensen examines three categories of capital in the study: telecommunications structures, telecommunications equipment and general equipment. The perpetual inventory method is used to construct capital stocks for these categories. This method calculates the current year's capital stocks as last year's stocks plus additions minus physical depreciation. Additions to the stocks are generated by deflating LECs' dollar expenditures on capital goods by the U.S. Bureau of Economic Analysis price indexes for these goods. The physical depreciation

rates are taken from Jorgenson.[22] The capital stocks needed to initialize the perpetual inventory method are approximated by the 1988 Form M gross book values of telephone plant in service, adjusted for physical depreciation, and changes in value since purchase.

Category capital expenditures are computed as the product of the "user cost of capital" and the capital stock. The user cost of capital is the cost of using an increment of capital stock for a year. It contains several components including a cost of borrowing, depreciation rate, expected capital gain on holding the capital, purchase price for the capital, and some tax factors. Christensen approximates the borrowing rate by a three year moving average of the U.S. economy-wide return on capital. The depreciation rates are taken from Jorgenson, and are the same as those used to construct the capital stocks. The purchase prices of capital are approximated by the same U.S. Bureau of Economic Analysis price indexes used to deflate the additions to the capital stock. The expected capital gain component is calculated as a three year moving average of the percent change in these price indexes.

An aggregate capital stock index is calculated as an expenditure share weighted average of the growth rates in the category capital stocks. Aggregate capital expenditures are the sum of the category capital expenditures. A user cost index is calculated by subtracting the growth rate in the aggregate capital stock from the growth rate in aggregate capital expenditures.

Finally, the Commission seeks information on certain corrections of replacement value and plant addition data contained in the original Christensen Study.[23] NYNEX provides a response on these matters in Appendix D hereto.

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[22] D. W. Jorgenson, "Productivity and Economic Growth," in E. R. Berndt and J. E. Triplett, eds., Fifty Years of Economic Measurement, University of Chicago Press, 1990, pp. 19-118.

[23] See X-Factor NPRM at ¶¶ 42, 44.

D. Materials Input

Expenditures on materials, rents and services are calculated by Christensen as cash operating expenses minus expensed labor compensation. These data are contained in the Form Ms. To calculate a quantity index of materials used, materials expenditures are deflated by the GDP-PI.[24]

E. Total Factor Productivity Growth

Once the quantity and price indexes for output, labor, capital and materials are constructed, it is a simple matter to calculate TFP growth. TFP growth is calculated as the growth rate in the aggregate output index minus the growth rate in the aggregate input index. The aggregate input index is an expenditure share weighted average of the growth rates in the labor, capital and materials indexes.

F. Christensen TFP Method And The Commission's Criteria

The Christensen TFP methodology is the best methodology for determining an X-Factor because it measures actual LEC productivity. This method is the only one which satisfies the Commission's criteria of being economically meaningful, ensuring that ongoing gains by the LECs in reducing unit costs are passed through to customers, and being reasonably simple and based on accessible and verifiable data.[25]

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[24] Ideally, materials expenditures would be disaggregated into categories such as advertising, education, printing, fuel, business and professional services, real estate and others. Government published price indexes would then be used to deflate the relevant categories of expenditures to obtain quantity indexes for the various categories of material. Unfortunately, expenditure data by category are not contained in the Form Ms, and would have to be obtained from the internal budgeting and accounting systems of the LECs. This approach, while feasible, is inconsistent with the Commission's objective of basing the X-Factor calculation on data that are accessible and verifiable.

[25] See X-Factor NPRM at ¶ 16.

The Christensen method is economically meaningful -- it calculates LEC productivity. This is the same method employed by Christensen Associates in their recognized study of productivity in the pre-divestiture Bell System.[26] This method has also been used by the U.S. Bureau of Labor Statistics ("BLS") in its various multi-factor productivity studies. The Christensen TFP methodology has been revised and simplified to allow all indices to be easily developed from accessible and verifiable data. The revised method satisfies the Commission's concern that the data used to calculate the X-Factor should be verifiable, timely and auditable.[27] The revised method should also ease the Commission's concerns regarding the level of complexity and resources required to calculate the X-Factor. Moreover, Attachment B of the USTA Comments in response to the X-Factor NPRM contains a Total Factor Productivity Review Plan ("TFPRP") to satisfy the Commission's request for verifiable and accurate information. This TFPRP provides a central point for all data associated with the Christensen TFP methodology for review by all interested parties.

G. Total Company X-Factor And Fixed Factor Interstate Adjustment

The Commission seeks comment on whether there is a valid distinction between intrastate and interstate productivity for purposes of calculating a TFP index and an input price index, and whether a satisfactory method exists to account for such differences. The Commission also requests comment on whether calculation of an interstate TFP number or an interstate input price index is economically meaningful, and if so, how such numbers would be calculated.[28]

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[26] "Total Factor Productivity in the Bell System, 1947-1979," September 1981.

[27] See X-Factor NPRM at ¶ 17.

[28] See X-Factor NPRM at ¶¶ 62-68.

As shown in the attached analysis by National Economic Research Associates ("NERA") (pp. 13-18), the calculation of TFP on anything less than a total company basis is not economically meaningful.[29] Productivity growth cannot be measured separately for subsets of services, such as interstate services, because the production function cannot be separated into the interstate or intrastate jurisdictions. The NERA Analysis also indicates that jurisdictional separations (Part 36) does not provide a basis for productivity analysis, and that use of Part 36 to separate input costs would not be economically meaningful.

As indicated in the X-Factor NPRM, the Commission has correctly found that interstate and intrastate services are largely provided over common facilities, and that the record contained no evidence that there was an economically meaningful way for productivity measurement purposes to divide and measure the facilities used for the provision of interstate service from facilities used for provision of intrastate services. The Commission, therefore, tentatively concluded that TFP should be calculated on a total company basis.[30] This was based on the recognition that costs and demand that are jurisdictionally separated pursuant to Part 36 may not be optimal benchmarks for setting interstate rates. These findings and tentative conclusions by the Commission should be reaffirmed. Measuring TFP on anything less than a total company basis would not satisfy the Commission's criterion that the X-Factor must be economically meaningful.[31] NYNEX recommends that the Baseline X-Factor should be based on

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[29] Taylor, Taardiff and Zarkadas, NERA, "Economic Evaluation Of Selected Issues From the Fourth Further Notice Of Proposed Rulemaking," November 1995 ("NERA Analysis"), included in Appendix C to the present NYNEX Comments.

[30] X-Factor NPRM at ¶ 63. See also Price Cap Review Order at ¶ 159.

[31] Similarly, productivity growth cannot be measured independently for regulated and nonregulated services. In response to X-Factor NPRM Issue 1.k (¶ 69), as NERA shows, using Part 64 to remove nonregulated costs and output from the TFP calculation would not produce a meaningful measure of TFP growth for regulated services. (See NERA Analysis, Appendix C, pp. 20-21.)

measurement of the five year moving average total company TFP as developed by Christensen's simplified methodology.

In the Price Cap Review proceeding, AT&T and MCI objected to the use of total company data for deriving TFP on the grounds that demand volumes for interstate access had grown more rapidly than for other LEC services, and that interstate services were more profitable than the intrastate services provided by the LECs. The Commission correctly found that no party had argued that the production functions (the technological relationship between inputs and outputs) significantly differ for intrastate and interstate services in ways that can be readily measured or separated.[32]

However, although NYNEX agrees with the TFP methodology for measuring total company productivity, intuitively the higher output growth rates for interstate indicate a potential need for an adjustment to the TFP result. NYNEX recognizes that, as both Christensen and NERA state, an interstate TFP cannot be economically developed using separated costs. However, the interstate market is based on output growth that reflects revenues primarily generated by MOU growth as compared to intrastate, which reflects a significant portion of output growth generated by slower line growth. Basing the productivity offset on only a total company TFP and not accounting for the higher revenue generation (output growth) in interstate may result in interstate revenues not aligning with the underlying separated interstate costs.

The Commission also requests comment on whether any of the Commission's monitoring or reporting requirements should be modified to reflect solely total company data, and whether sharing requirements should be modified to reflect total company performance under a total company TFP approach (X-Factor NPRM at ¶ 68). There should be no such modifications. The Commission should eliminate all vestiges of rate of return regulation from the long term price cap plan and should eliminate sharing altogether.

[32] Price Cap Review Order at ¶ 159.

Although as NERA states,[33] separated costs do not reflect underlying economic costs for the interstate jurisdiction, interstate earnings are nonetheless based on separated costs, and as such provide the Commission with information that may bear upon reasonableness of interstate rates. For these reasons, the Commission should consider such an adjustment based on sound economic rationale to ensure a final reasonable Baseline X-Factor offset.

H. Input Price Differential

The Commission solicits comment on how to account for changes in LECs' input prices for use in a TFP approach to calculating the X-Factor.[34] The Commission also requests comment on its analysis and conclusions regarding the estimation and use of the input price differential, as presented in Appendix F of the Price Cap Review Order.[35]

As explained in the X-Factor NPRM, changes in a firm's unit cost of output result from changes in internal productivity and changes in the price of input resources, i.e., input price changes. On this basis, and the conclusions drawn in Appendix F of the Price Cap Review Order, the Commission tentatively concluded that the X-Factor should include an adjustment to reflect changes in LECs' input prices.[36]

The attached studies by both Christensen and NERA show that the long term differential between LEC input prices and input prices for the economy as a whole is zero and that the long term price cap plan should not include a fixed input price differential. Additionally, Christensen and NERA demonstrate that the input price differential presented in Appendix F of the Price Cap

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[33] Appendix C, NERA Analysis, pp. 17-19.

[34] X-Factor NPRM Issue 1i, ¶ 56.

[35] X-Factor NPRM at ¶ 55.

[36] X-Factor NPRM at ¶ 54.